

VA Application Note No. V- 24

Title:	Copper and chromium in etching bath
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Summary:	Determination of Cu and Cr in an etching bath. Due to the high concentrations of Mn and Ni, Cu is determined as the EDTA complex and Mn as DTPA complex
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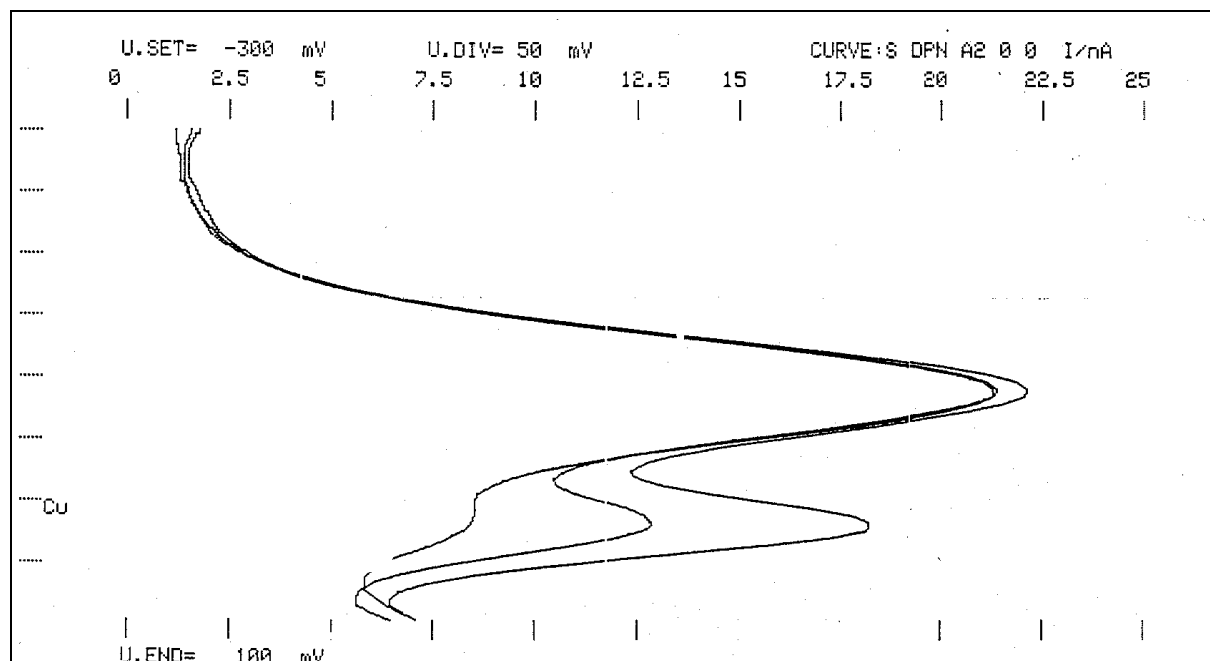
Sample:	Etching bath solution
Sample Preparation:	UV digestion

Copper:	
Electrolyte:	EDTA, NH ₄ Ac
AE:	Pt
RE:	Ag/AgCl/KCl 3M
Parameters:	DPASV (+50 mV), HMDE U _{meas} = -300 mV (2s), U _{start} = -300 mV, U _{end} = +100 mV Ep (Cu) = +20 mV

Chromium:	
Electrolyte:	NaCH ₃ COO, NaNO ₃ , diethylenetriaminetetraacetic acid (DTPA) pH = 6.2
AE:	Pt
RE:	Ag/AgCl/KCl 3M
Parameters:	DPCSV (-50 mV), HMDE U _{meas} = -1000 mV (10s), U _{start} = -1000 mV, U _{end} = -1450 mV Ep (Cr) = -1230 mV

Results:	Cu μg/L	Cr μg/L
	432	47

Determination of copper



Determination of chromium	
1	0.0100 g
2	0.0100 g
3	0.0100 g
4	0.0100 g
5	0.0100 g
6	0.0100 g
7	0.0100 g
8	0.0100 g
9	0.0100 g
10	0.0100 g
11	0.0100 g
12	0.0100 g
13	0.0100 g
14	0.0100 g
15	0.0100 g
16	0.0100 g
17	0.0100 g
18	0.0100 g
19	0.0100 g
20	0.0100 g
21	0.0100 g
22	0.0100 g
23	0.0100 g
24	0.0100 g
25	0.0100 g
26	0.0100 g
27	0.0100 g
28	0.0100 g
29	0.0100 g
30	0.0100 g
31	0.0100 g
32	0.0100 g
33	0.0100 g
34	0.0100 g
35	0.0100 g
36	0.0100 g
37	0.0100 g
38	0.0100 g
39	0.0100 g
40	0.0100 g
41	0.0100 g
42	0.0100 g
43	0.0100 g
44	0.0100 g
45	0.0100 g
46	0.0100 g
47	0.0100 g
48	0.0100 g
49	0.0100 g
50	0.0100 g
51	0.0100 g
52	0.0100 g
53	0.0100 g
54	0.0100 g
55	0.0100 g
56	0.0100 g
57	0.0100 g
58	0.0100 g
59	0.0100 g
60	0.0100 g
61	0.0100 g
62	0.0100 g
63	0.0100 g
64	0.0100 g
65	0.0100 g
66	0.0100 g
67	0.0100 g
68	0.0100 g
69	0.0100 g
70	0.0100 g
71	0.0100 g
72	0.0100 g
73	0.0100 g
74	0.0100 g
75	0.0100 g
76	0.0100 g
77	0.0100 g
78	0.0100 g
79	0.0100 g
80	0.0100 g
81	0.0100 g
82	0.0100 g
83	0.0100 g
84	0.0100 g
85	0.0100 g
86	0.0100 g
87	0.0100 g
88	0.0100 g
89	0.0100 g
90	0.0100 g
91	0.0100 g
92	0.0100 g
93	0.0100 g
94	0.0100 g
95	0.0100 g
96	0.0100 g
97	0.0100 g
98	0.0100 g
99	0.0100 g
100	0.0100 g

